

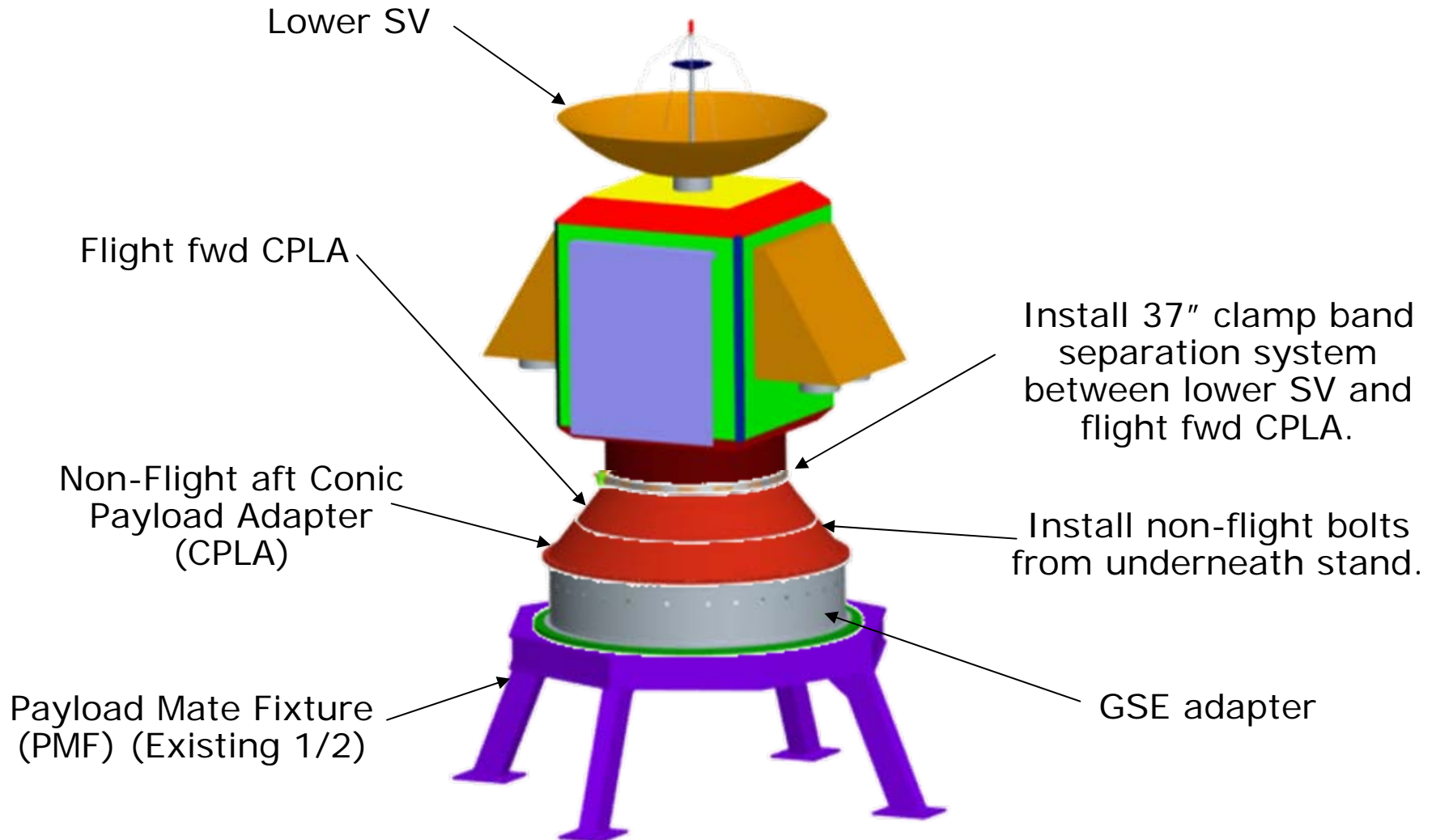
Dual Spacecraft System (DSS)

Concept of Operations

Ben Colvin

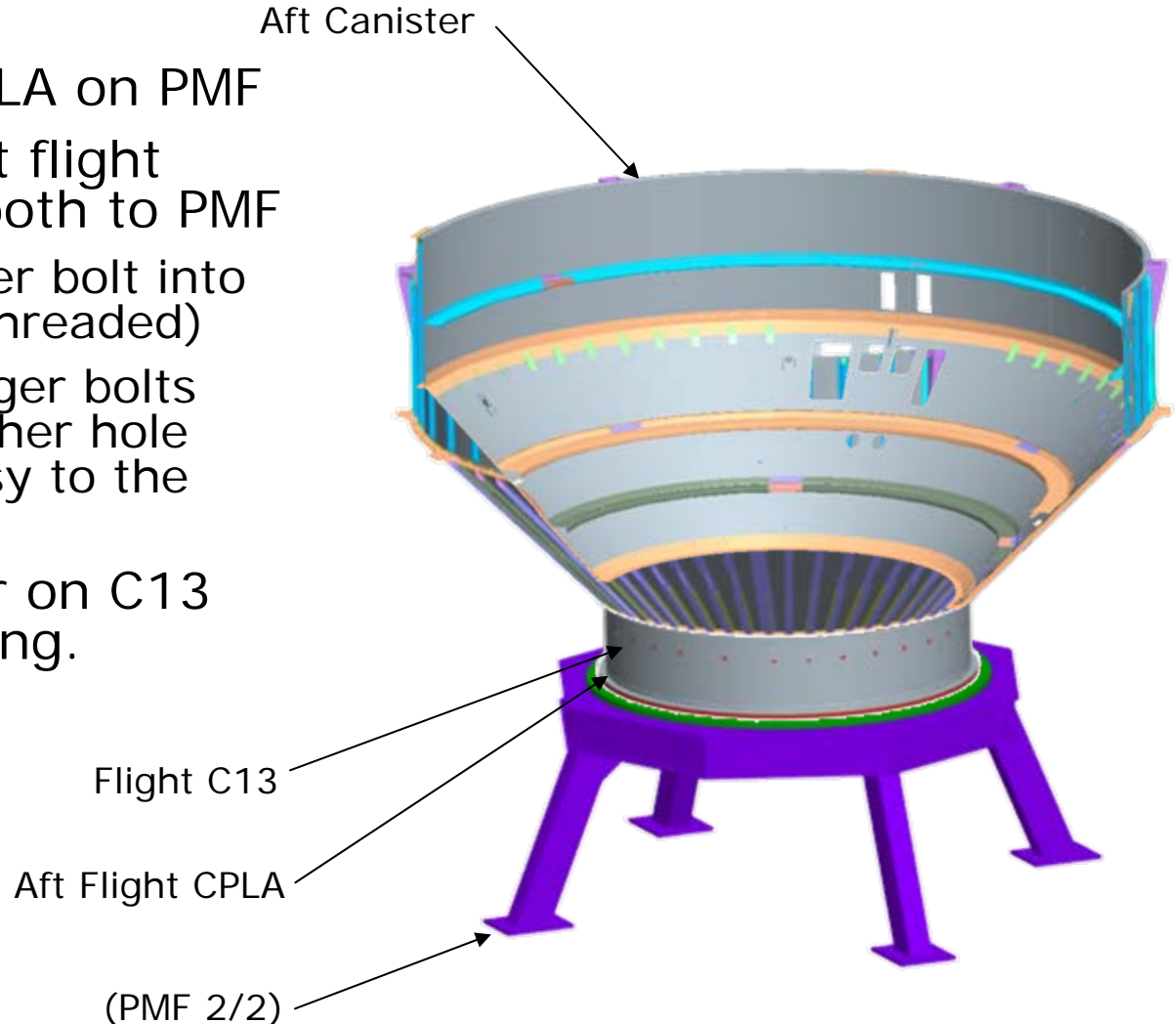
Note: The following presentation has animated slides and is meant to be viewed in Slideshow mode. When viewed in other formats, i.e. printed, some pictures may overlap due to these animations.

Lower Spacecraft (SV) Installation



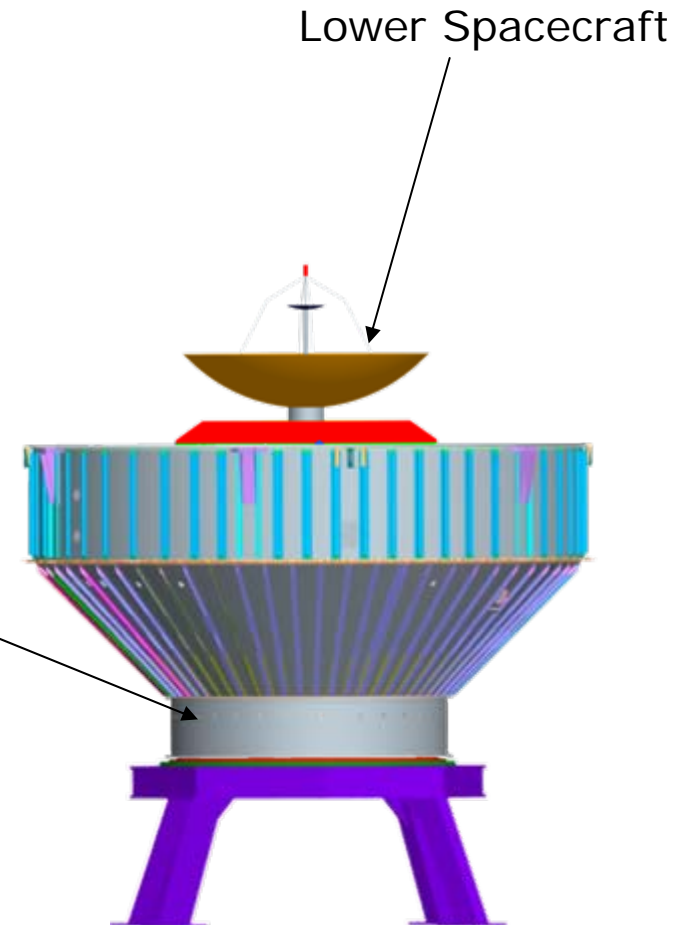
Aft Canister Installation

1. Place aft flight CPLA on PMF
2. Place C13 over aft flight CPLA and install both to PMF
 - Install every other bolt into aft flight CPLA (threaded)
 - Install [TBD] longer bolts through every other hole attaching the assy to the PMF
3. Install aft canister on C13 using new GSE sling.

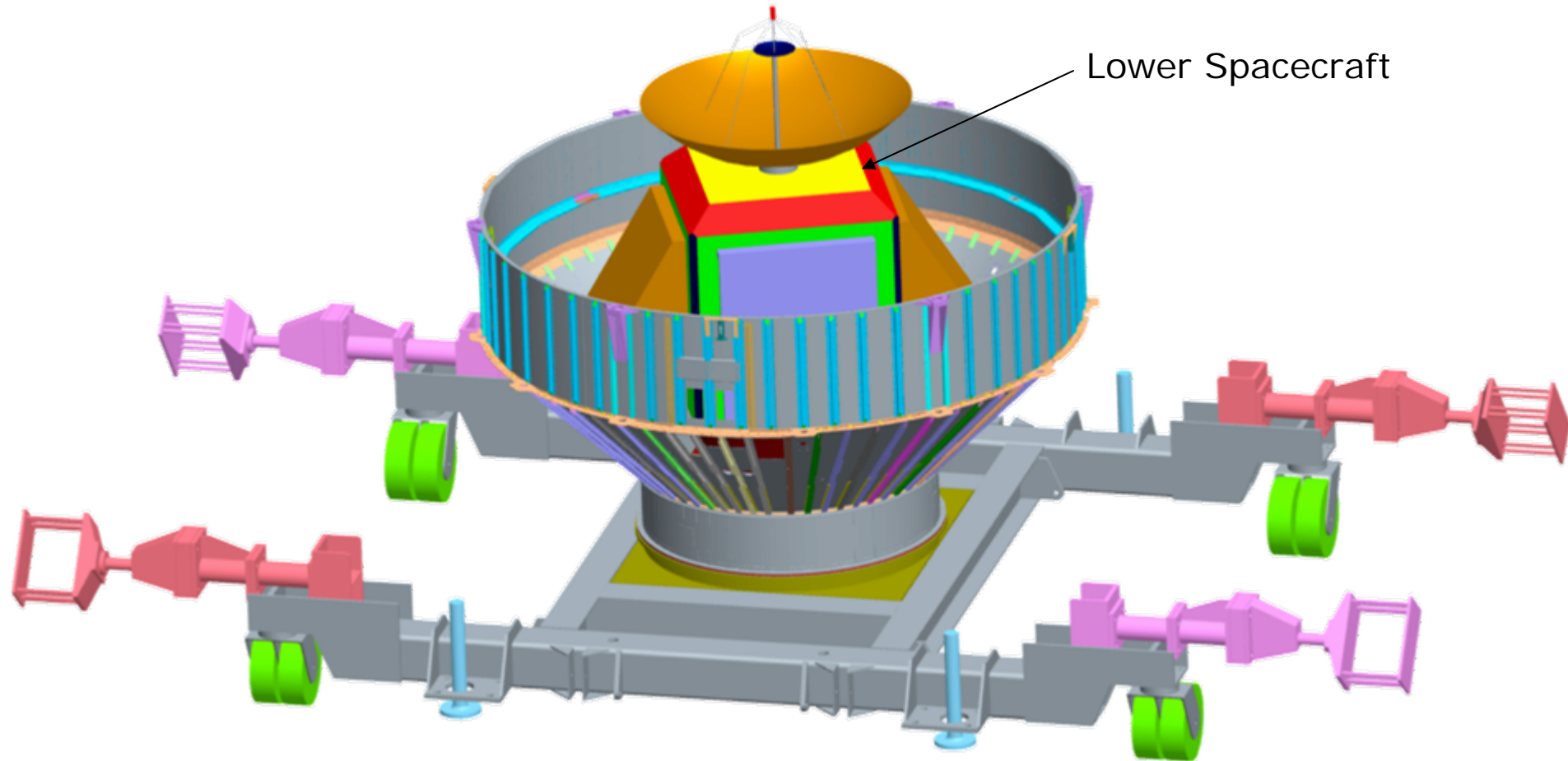


Lower Spacecraft Installation

1. Install Lower Spacecraft and fwd flight CPLA to the aft flight CPLA.
 - Alignment pins align the two conic adapters
 - Technician below PMF to align holes
2. Install flight fasteners from below the PMF.



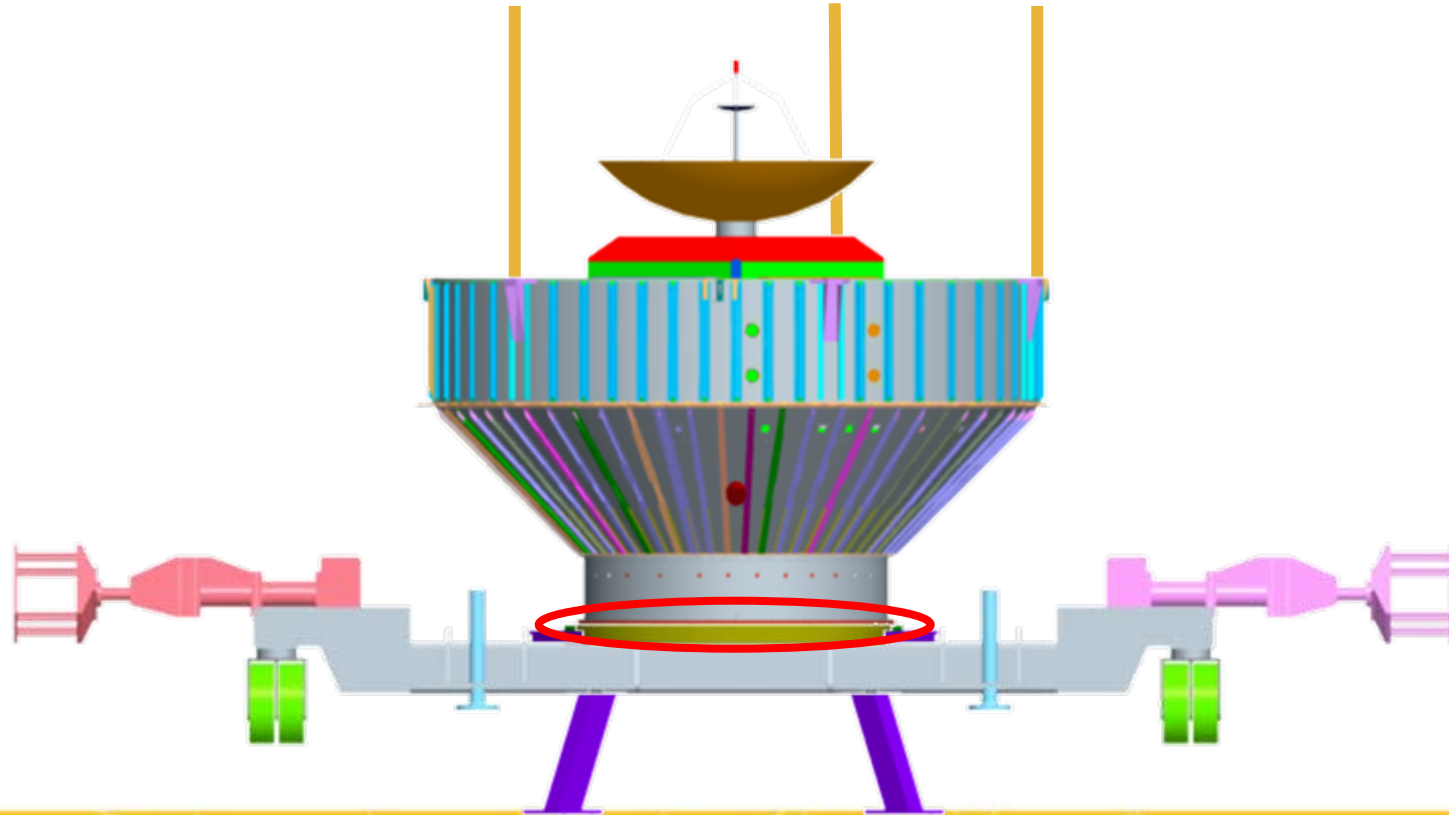
Spacecraft Transportation



- ❑ Install lower spacecraft and aft DSS assembly on Spacecraft Transportation Vehicle (STV) using new sling.
 - Fasten lower assembly to STV with 54 bolts

Spacecraft Transportation

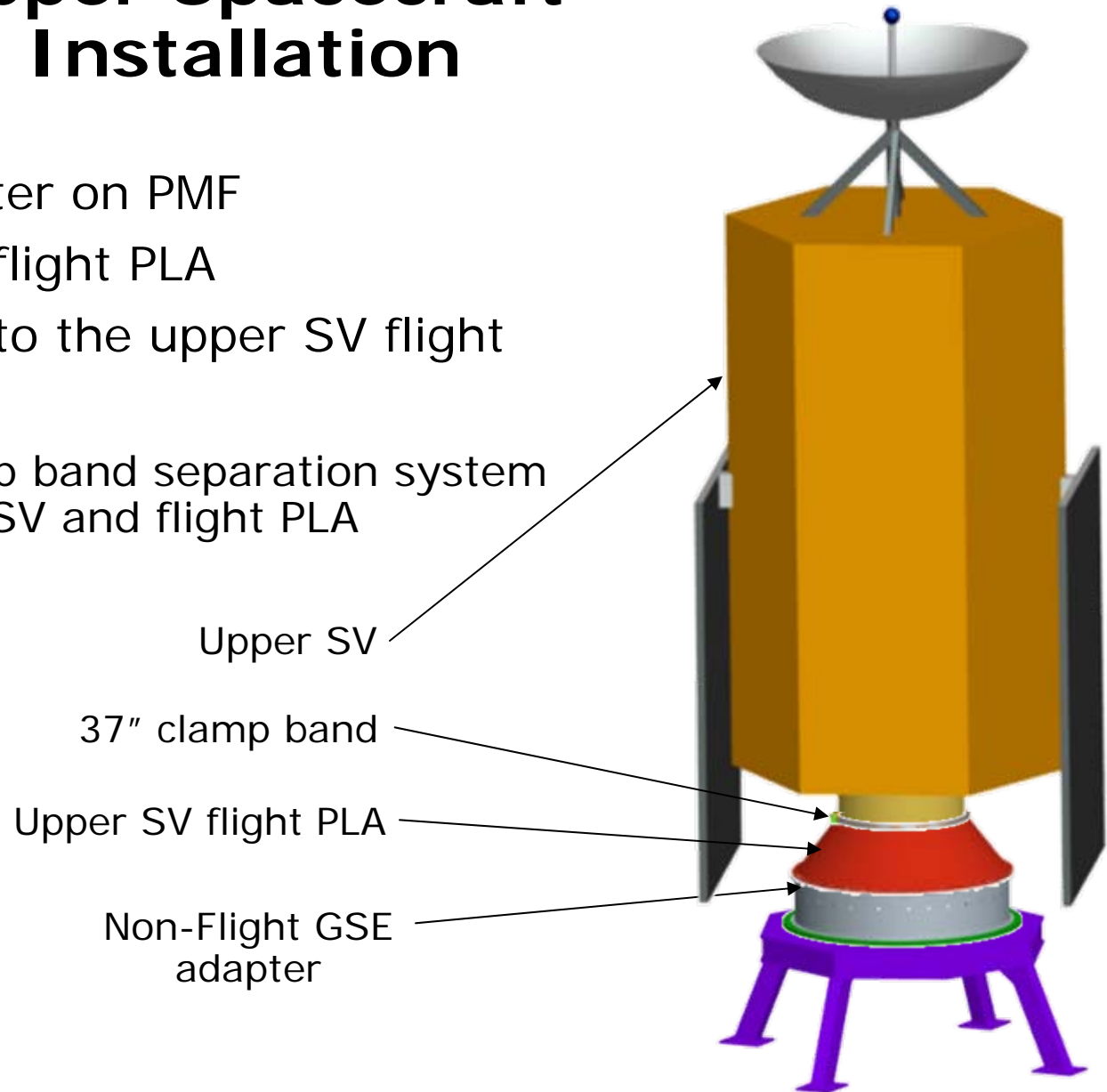
1. Lift slings are attached to aft canister
2. Bolts threaded into PMF are removed
3. Assembly hoisted and moved to STV
4. Assembly is bolted to STV



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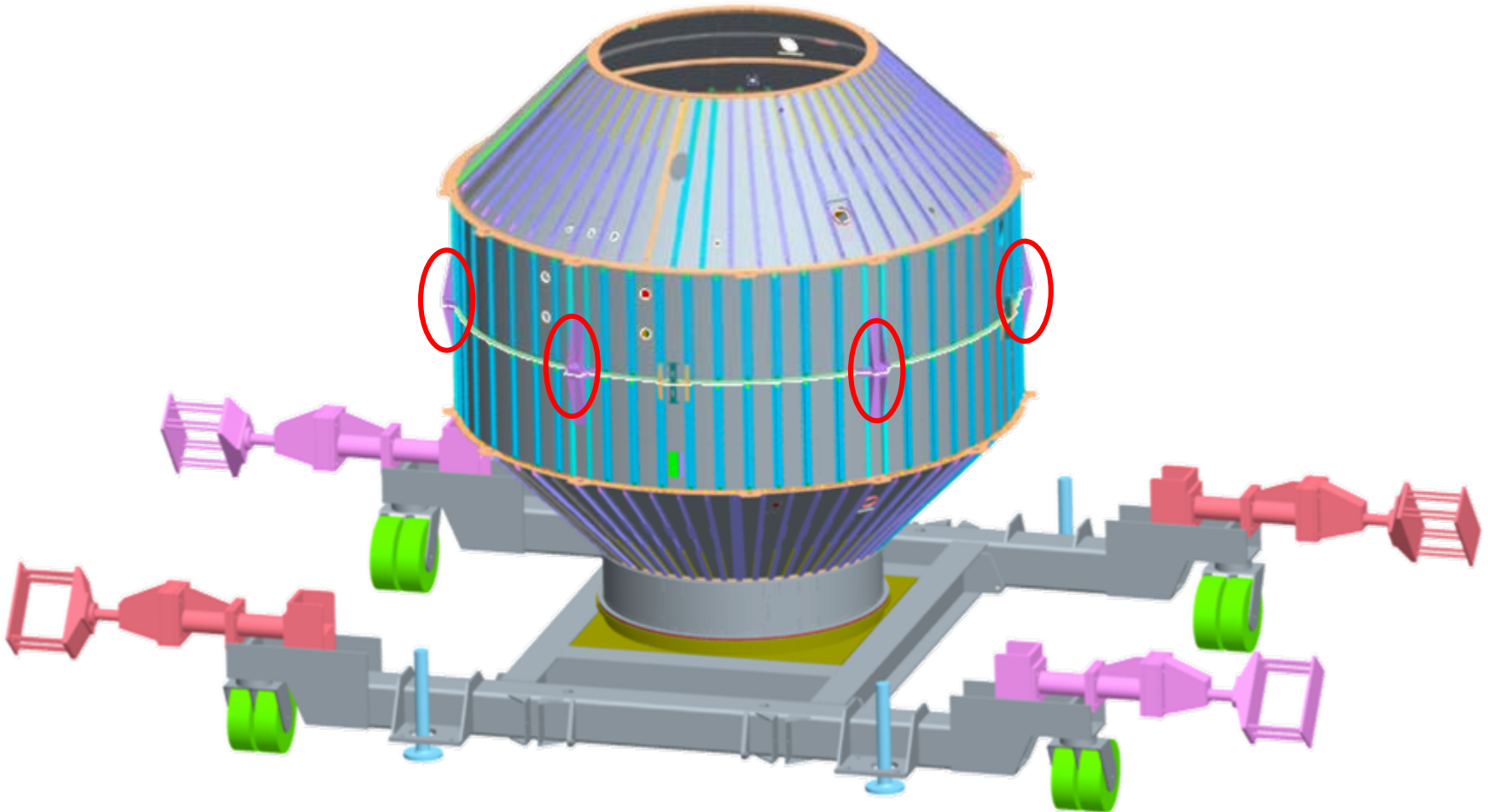
Upper Spacecraft Installation

1. Install GSE adapter on PMF
 2. Install upper SV flight PLA
 3. Install upper SV to the upper SV flight PLA
- Install 37" clamp band separation system between upper SV and flight PLA



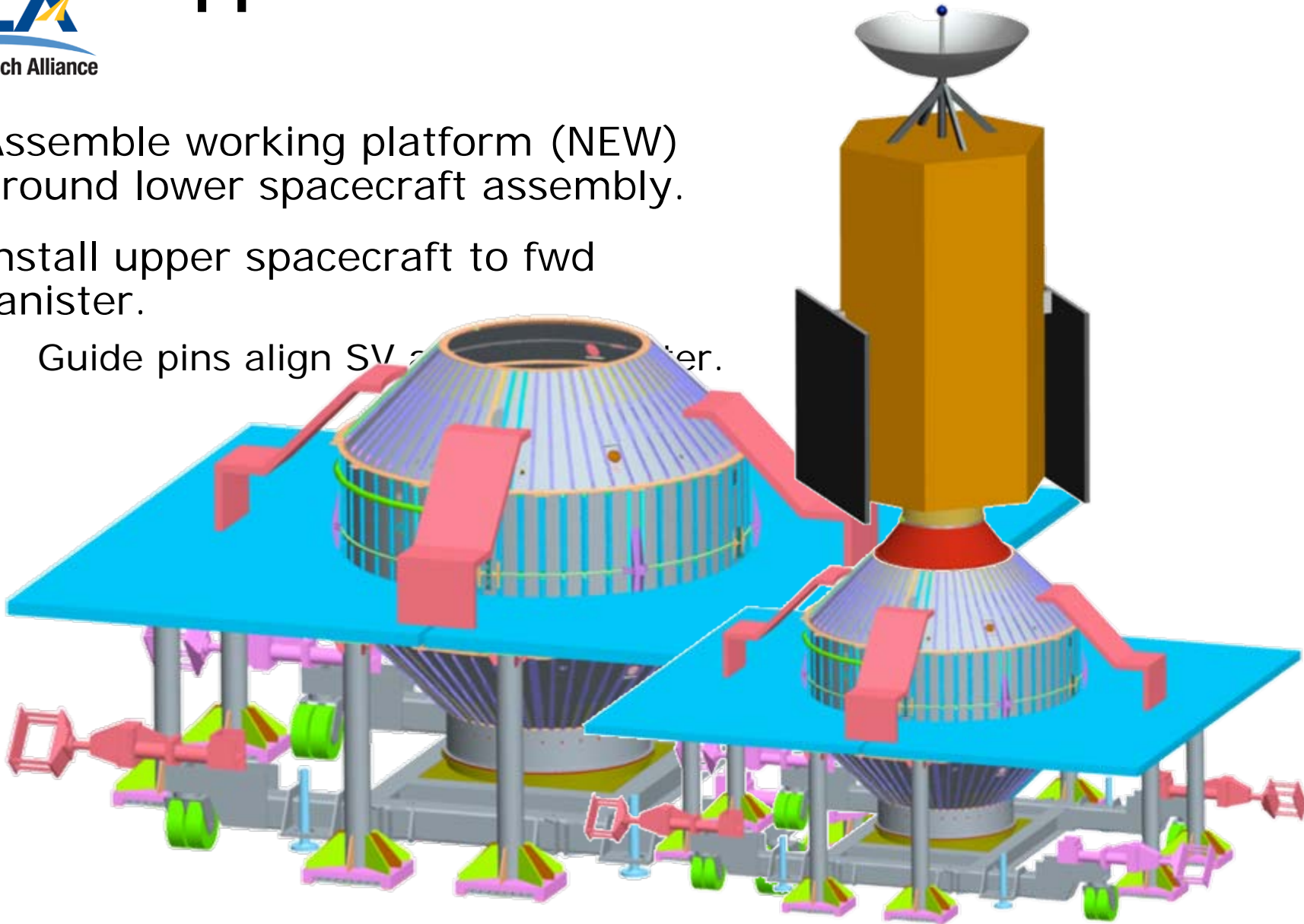
DSS Assembly

- ❑ Install fwd canister to aft canister
 - Six explosive bolts secure two canisters together



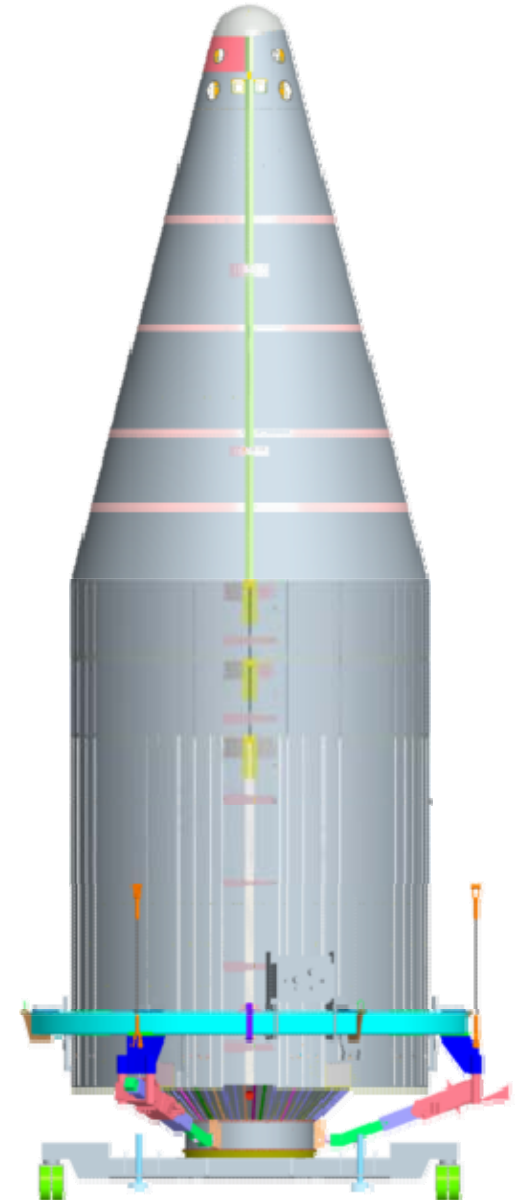
Upper SV Installation

1. Assemble working platform (NEW) around lower spacecraft assembly.
2. Install upper spacecraft to fwd canister.
 - Guide pins align SV center with canister.



PLF/Spacecraft Encapsulation

1. Two fairing halves and torus assembly halves are positioned on either side of the DSS
2. Halves are brought together and torus ring bolted together then fairing halves are bolted together with explosive bolts
3. Torus arms are extended and attached to the lifting lugs on the payload adapter
4. Carts are removed and slings are attached to the torus ring
5. Assembly is put on truck for transportation



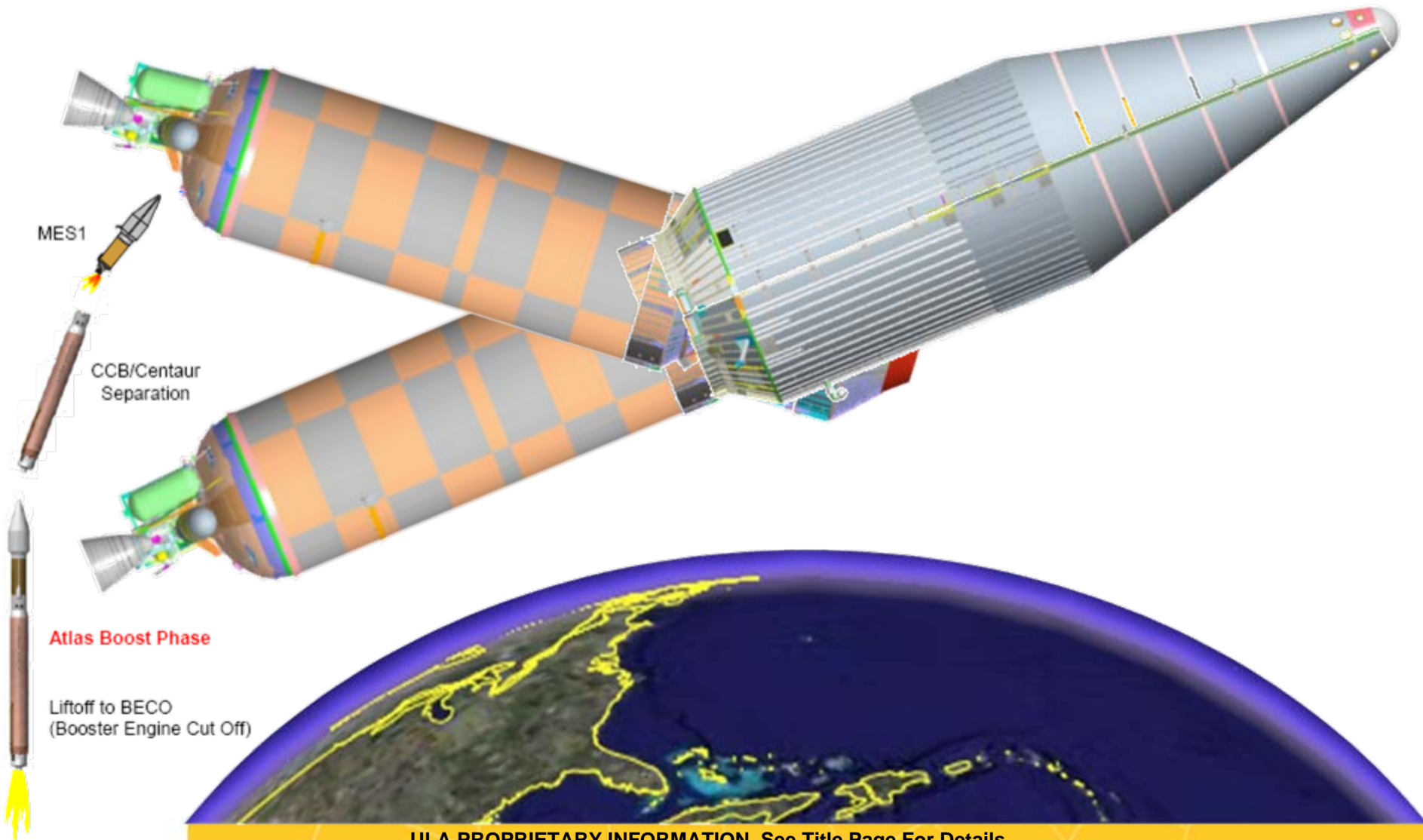
Installation to Centaur

1. Boattail is lowered and installed to Centaur
2. Fairing, DSS assembly and Payloads are lowered and attached to the Centaur Forward Adapter (CFA)
 - CPLA and C13 are attached to CFA by bolting through open holes then removing non-flight bolts and installing the remaining bolts
3. Torus arms are removed/hinged away from payload adapter and fairing is lowered and attached to the boattail
4. Torus Ring is removed using same sling



Separation

Upper Stage Separation



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